

Figure Q4-12c
Predicted and Observed Geometric Mean Blood Lead Levels in 0-84 Month Old Children
Default Parameters - Three Dust:Soil Partition Scenarios
Site Wide 1988-1998

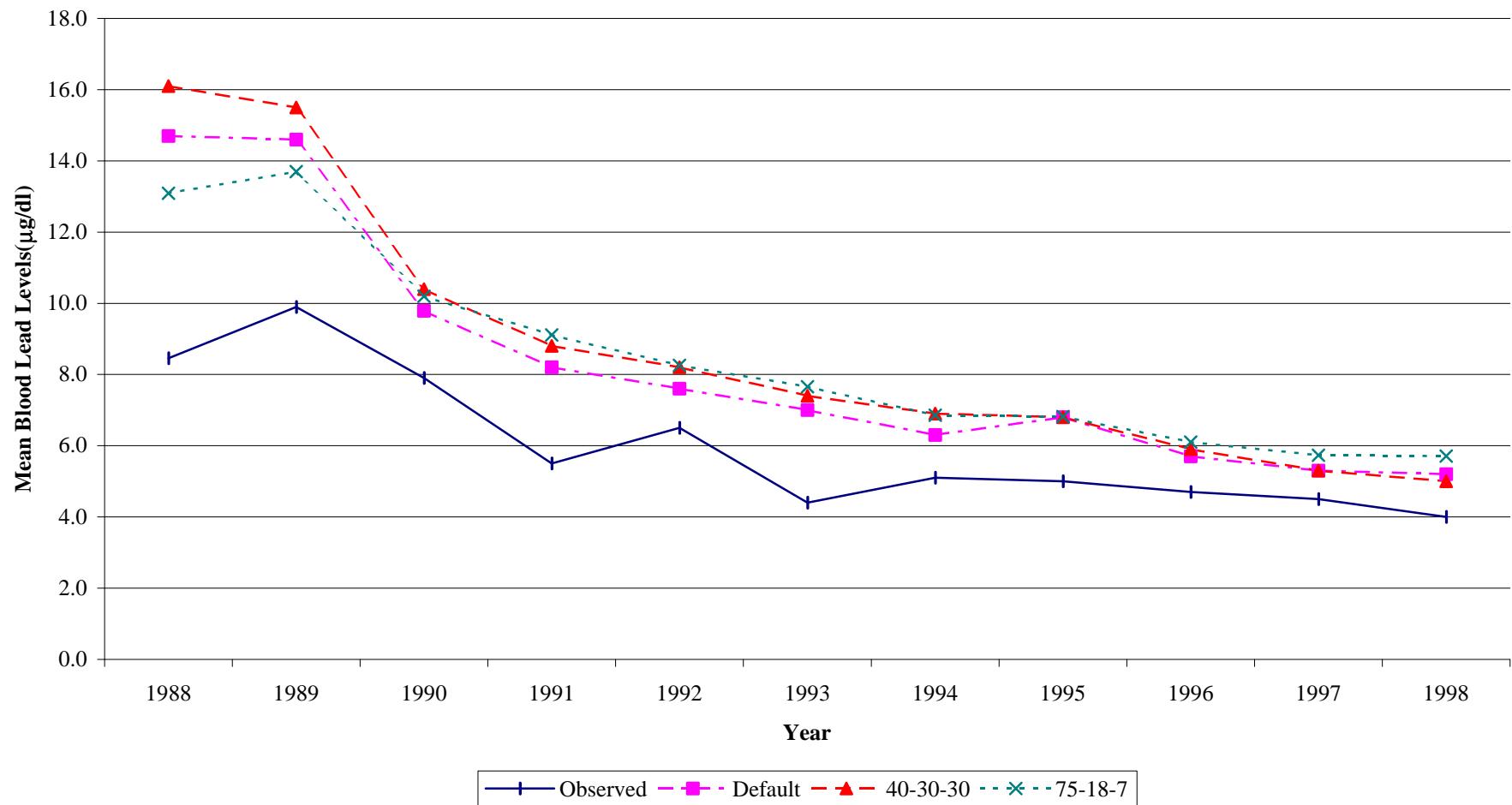


Figure Q4-13a
Predicted Community and Observed Geometric Standard Deviations Default Parameters
Three Dust:Soil Partition Scenarios
Kellogg 1988-1998

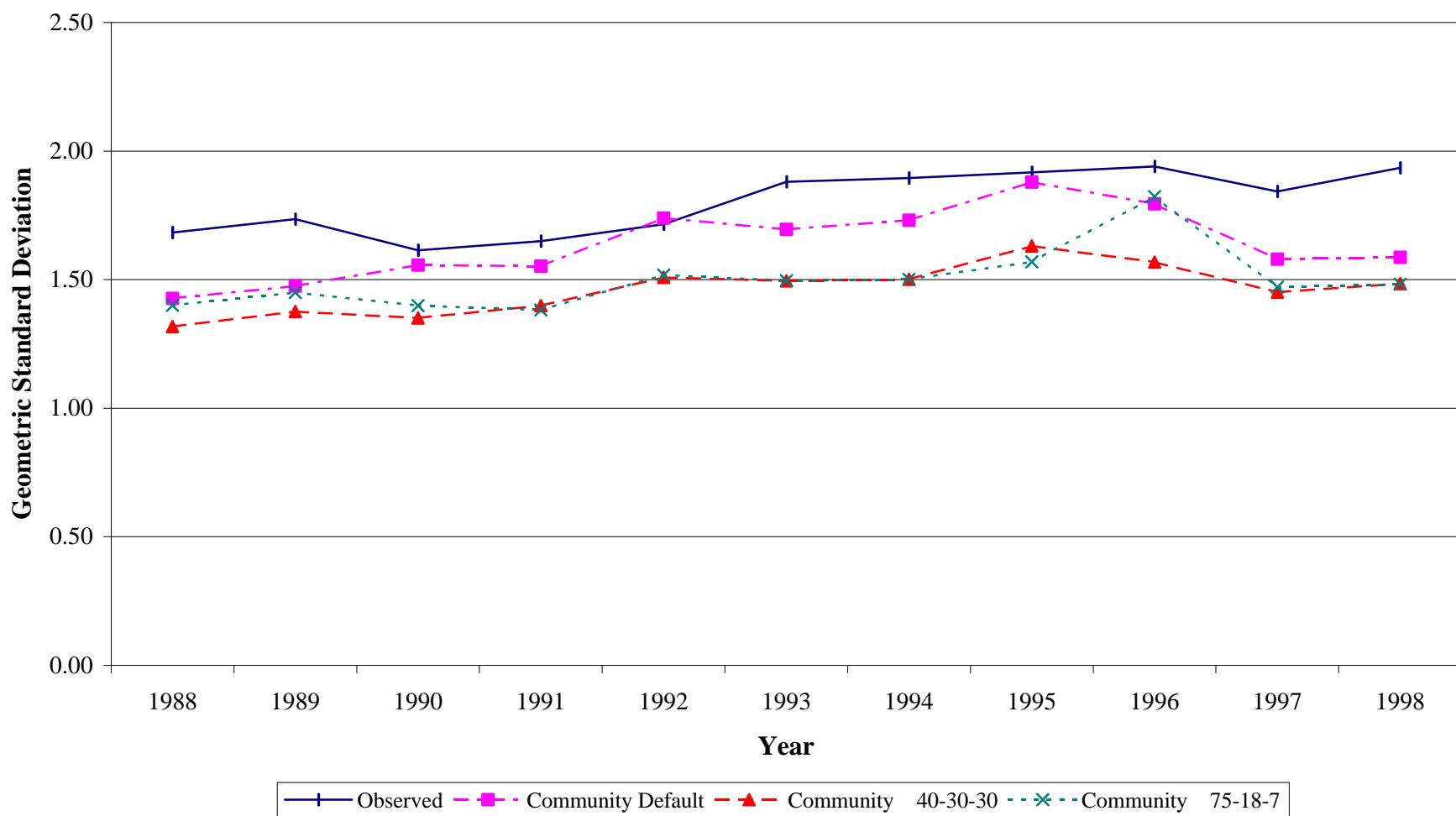


Figure Q4-13b
Predicted Community and Observed Geometric Standard Deviations Default Parameters
Three Dust:Soil Partition Scenarios
Smelterville 1988-1998

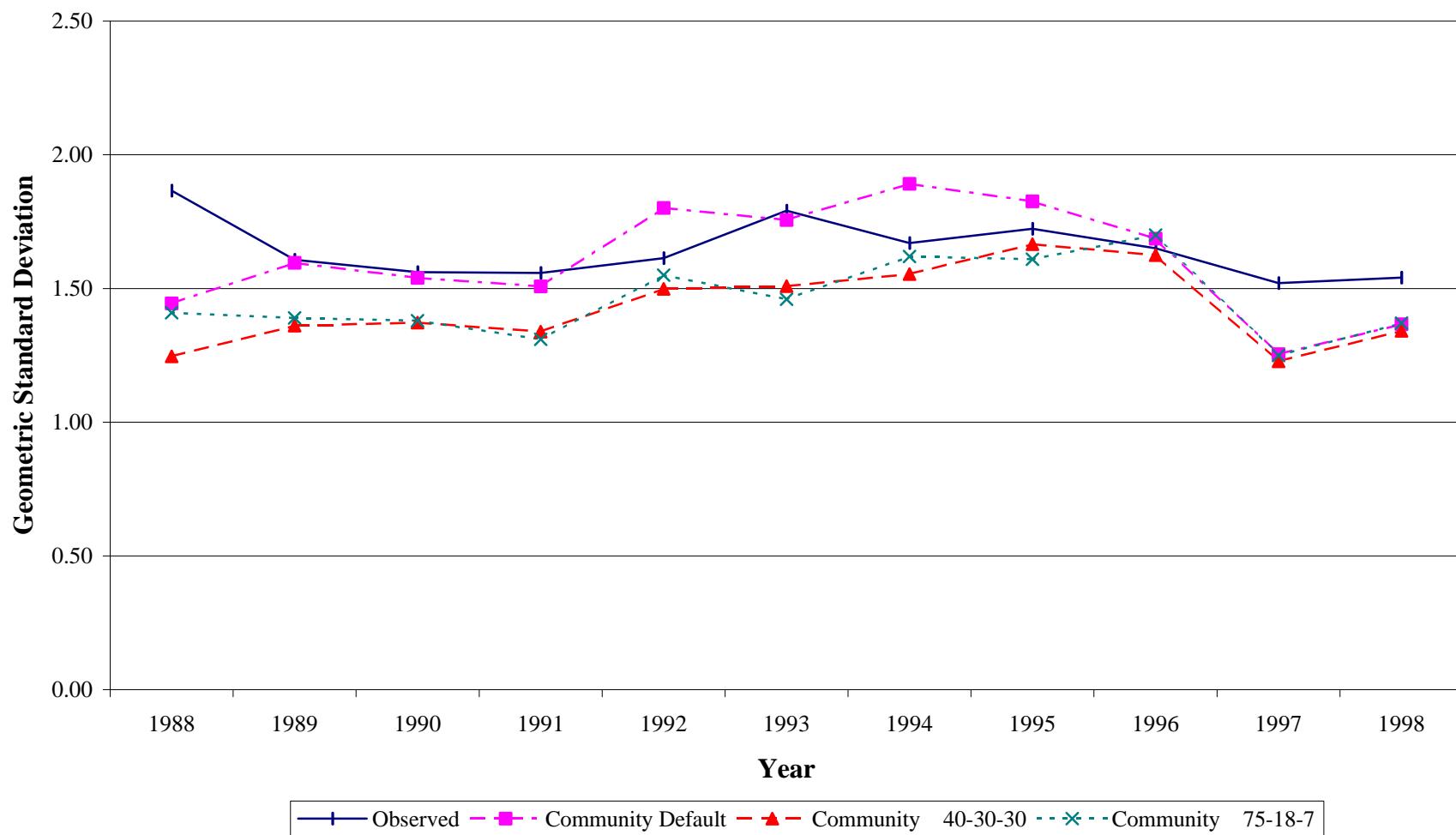


Figure Q4-13c
Predicted Community and Observed Geometric Standard Deviations Default
Parameters Three Dust:Soil Partition Scenarios
Site Wide 1988-1998

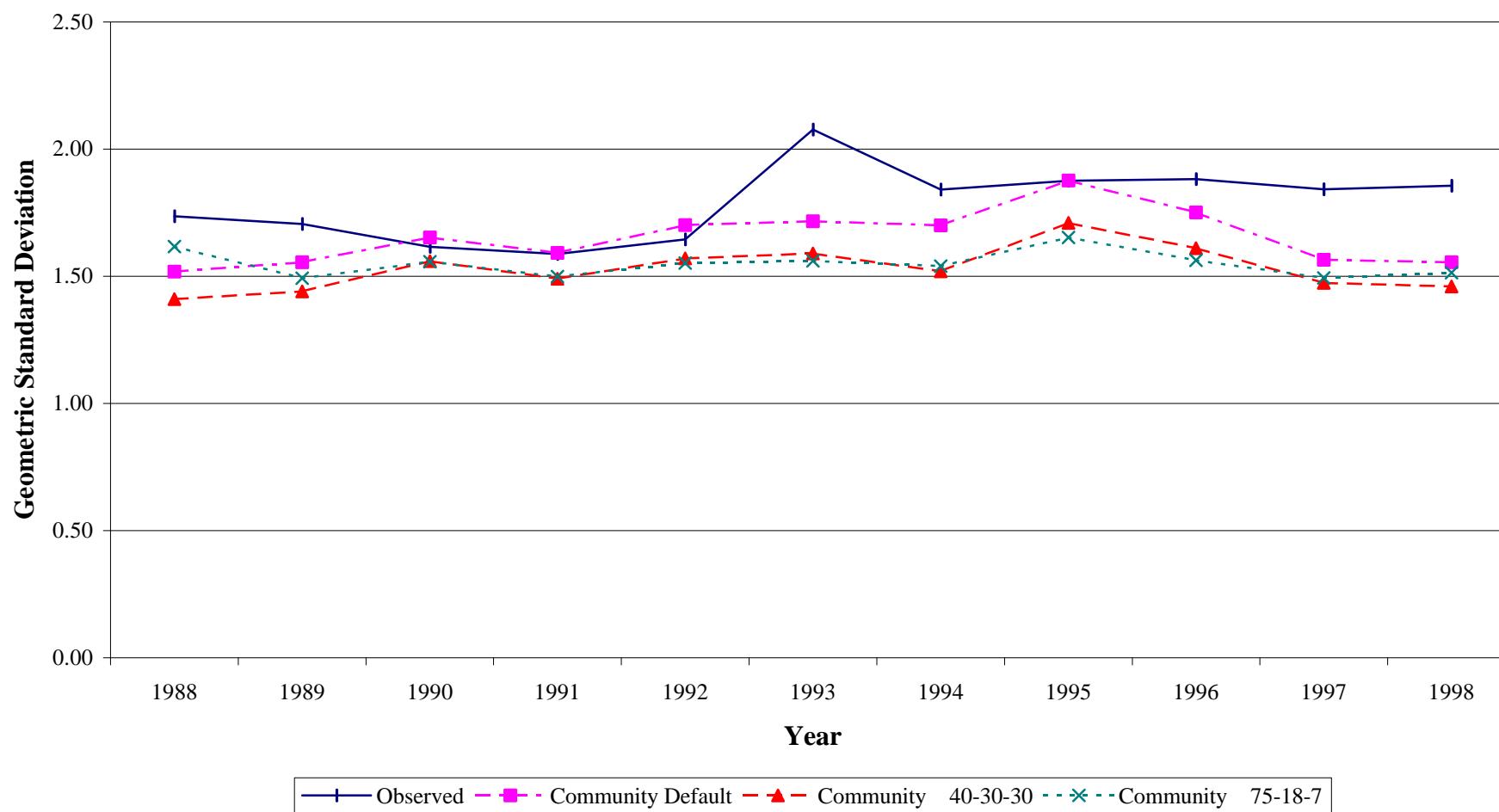


Figure Q4-13d
Predicted Overall and Observed Geometric Standard Deviations Default Parameters
Three Dust:Soil Partition Scenarios
Kellogg 1988-1998

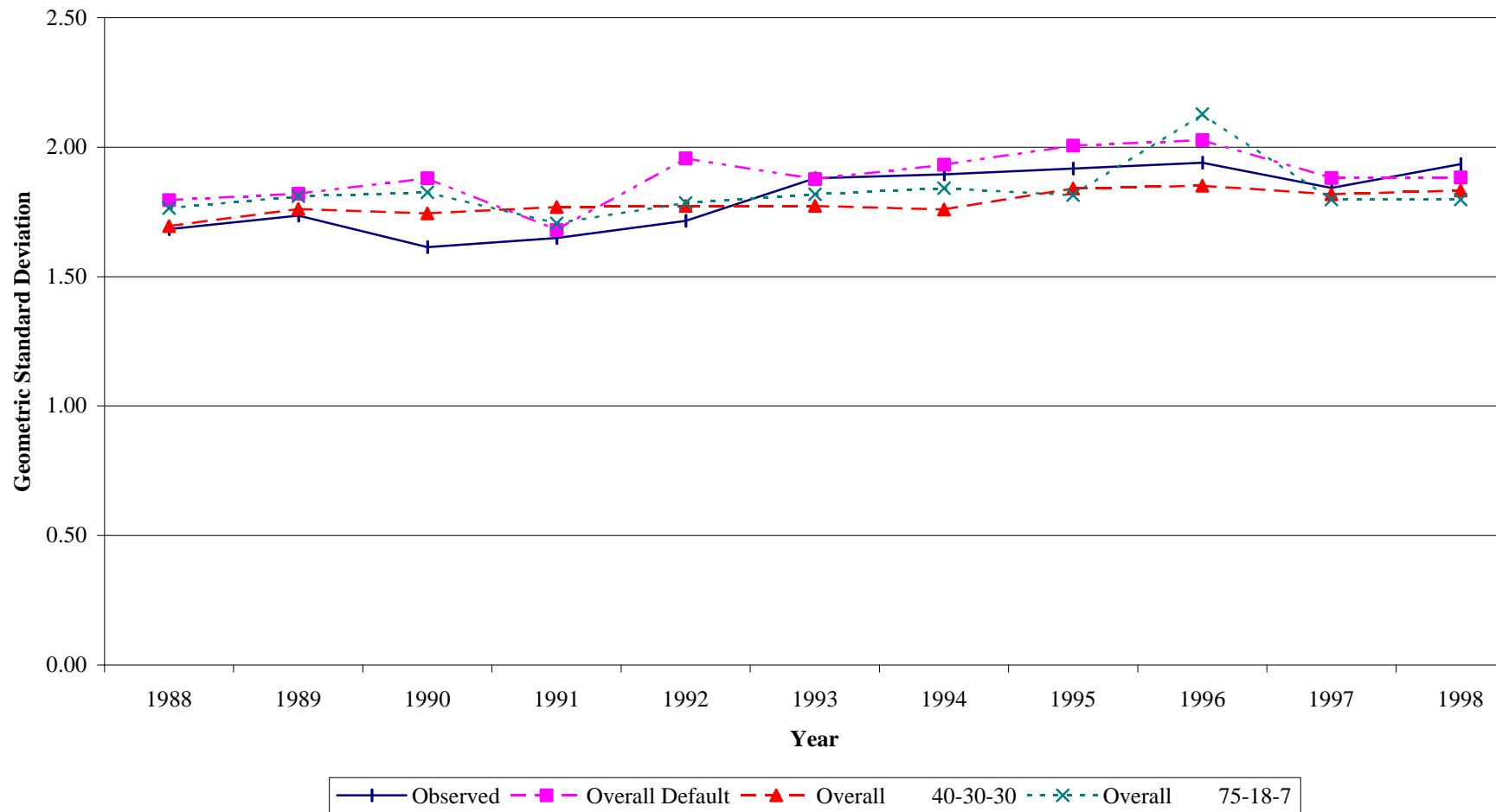


Figure Q4-13e
Predicted Overall and Observed Geometric Standard Deviations Default Parameters
Three Dust:Soil Partition Scenarios
Smelterville 1988-1998

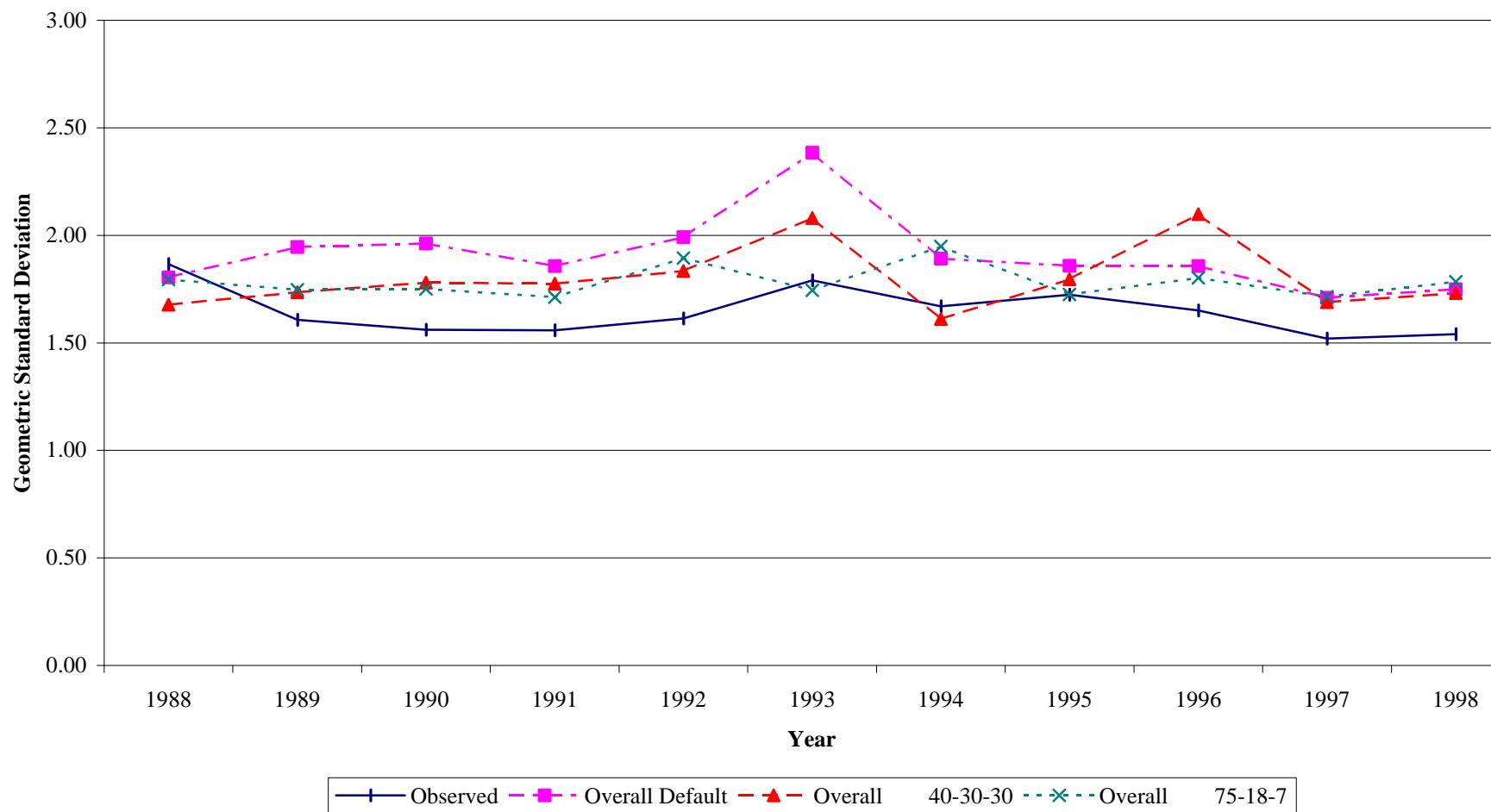


Figure Q4-13f
Predicted Overall and Observed Geometric Standard Deviations Default Parameters
Three Dust:Soil Partition Scenarios
Site Wide 1988-1998

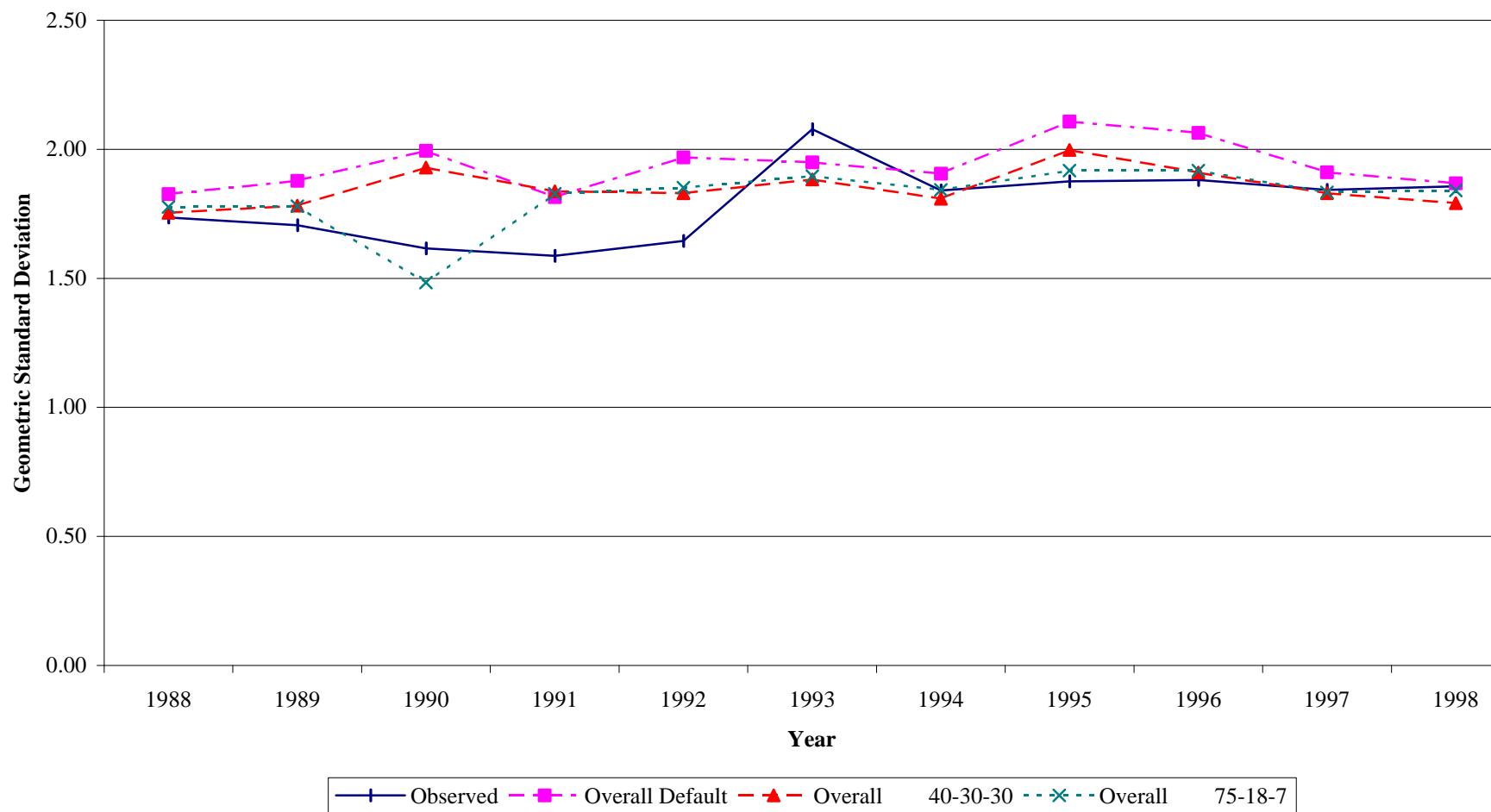


Table Q4.26 Predicted and Observed Geometric Mean Blood Lead Levels for 0-84 Month Old Children, Default Parameters - Three Dust:Soil Partition Scenarios

Observed and Predicted Blood Lead Levels ($\mu\text{g}/\text{dl}$)				
Year	Observed	Default	40-30-30	75-18-7
Kellogg				
1988	8.1	16.4	17.7	15.0
1989	9.3	16.2	16.8	15.2
1990	8.3	11.4	12.6	11.7
1991	6.0	9.3	10.0	10.4
1992	6.9	8.3	9.1	9.1
1993	5.2	7.2	7.9	8.1
1994	5.5	6.8	7.5	7.4
1995	5.2	8.1	8.3	8.1
1996	5.1	6.3	6.8	6.7
1997	4.9	5.7	5.9	6.5
1998	4.0	5.6	5.3	6.3
Smelterville				
1988	11.5	13.6	15.6	12.7
1989	13.2	13.3	15.6	12.8
1990	8.7	13.7	15.3	14.9
1991	5.9	10.1	11.7	11.5
1992	7.4	8.3	10.0	9.2
1993	5.8	10.2	11.2	11.0
1994	5.3	7.4	8.9	8.7
1995	6.2	6.3	6.3	7.1
1996	5.8	5.4	5.5	6.2
1997	5.2	3.7	3.4	3.9
1998	5.8	5.0	4.4	5.7
Site Wide				
1988	8.5	14.7	16.1	13.1
1989	9.9	14.6	15.5	13.7
1990	7.9	9.8	10.4	10.2
1991	5.5	8.2	8.8	9.1
1992	6.5	7.6	8.2	8.3
1993	4.4	7.0	7.4	7.7
1994	5.1	6.3	6.9	6.9
1995	5.0	6.8	6.8	6.8
1996	4.7	5.7	5.9	6.1
1997	4.5	5.3	5.3	5.7
1998	4.0	5.2	5.0	5.7

Table Q4.27 Predicted and Observed Geometric Standard Deviation, 1988-1998, Default Parameters - Three Dust:Soil Partition Scenarios

Observed and Predicted Geometric Standard Deviations							
Year	Observed	Community Default	Overall Default	Community 40-30-30	Overall 40-30-30	Community 75-18-7	Overall 75-18-7
Kellogg							
1988	1.68	1.43	1.80	1.32	1.70	1.40	1.76
1989	1.74	1.48	1.82	1.38	1.76	1.45	1.81
1990	1.61	1.56	1.88	1.35	1.74	1.40	1.83
1991	1.65	1.55	1.68	1.40	1.77	1.38	1.71
1992	1.72	1.74	1.96	1.51	1.77	1.52	1.78
1993	1.88	1.70	1.88	1.50	1.77	1.50	1.82
1994	1.89	1.73	1.93	1.50	1.76	1.50	1.84
1995	1.92	1.88	2.01	1.63	1.84	1.57	1.82
1996	1.94	1.79	2.03	1.57	1.85	1.82	2.13
1997	1.84	1.58	1.88	1.45	1.82	1.47	1.80
1998	1.93	1.59	1.88	1.48	1.83	1.48	1.80
Smelterville							
1988	1.87	1.44	1.80	1.25	1.68	1.41	1.79
1989	1.61	1.60	1.95	1.36	1.74	1.39	1.75
1990	1.56	1.54	1.96	1.37	1.78	1.38	1.75
1991	1.56	1.51	1.86	1.34	1.78	1.31	1.71
1992	1.61	1.80	1.99	1.50	1.83	1.55	1.89
1993	1.79	1.76	2.38	1.51	2.08	1.46	1.74
1994	1.67	1.89	1.89	1.55	1.61	1.62	1.95
1995	1.72	1.83	1.86	1.67	1.80	1.61	1.72
1996	1.65	1.69	1.86	1.63	2.10	1.70	1.80
1997	1.52	1.25	1.71	1.23	1.69	1.25	1.72
1998	1.54	1.37	1.75	1.34	1.73	1.37	1.78
Site Wide							
1988	1.74	1.52	1.83	1.41	1.75	1.62	1.78
1989	1.71	1.56	1.88	1.44	1.78	1.49	1.78
1990	1.62	1.65	1.99	1.56	1.93	1.56	1.48
1991	1.59	1.59	1.81	1.49	1.84	1.50	1.83
1992	1.65	1.70	1.97	1.57	1.83	1.55	1.85
1993	2.08	1.72	1.95	1.59	1.88	1.56	1.90
1994	1.84	1.70	1.91	1.52	1.81	1.54	1.84
1995	1.88	1.88	2.11	1.71	2.00	1.65	1.92
1996	1.88	1.75	2.06	1.61	1.91	1.56	1.92
1997	1.84	1.56	1.91	1.47	1.83	1.49	1.83
1998	1.86	1.56	1.87	1.46	1.79	1.51	1.84

Figure Q4-14a
**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
 Exceeding 10 $\mu\text{g}/\text{dl}$ Default Parameters - Three Dust : Soil Partition Scenarios**
Kellogg 1988-1998



Figure Q4-14b
**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
 Exceeding 10 μ g/dl Default Parameters - Three Dust : Soil Partition Scenarios**
Smelterville 1988-1998

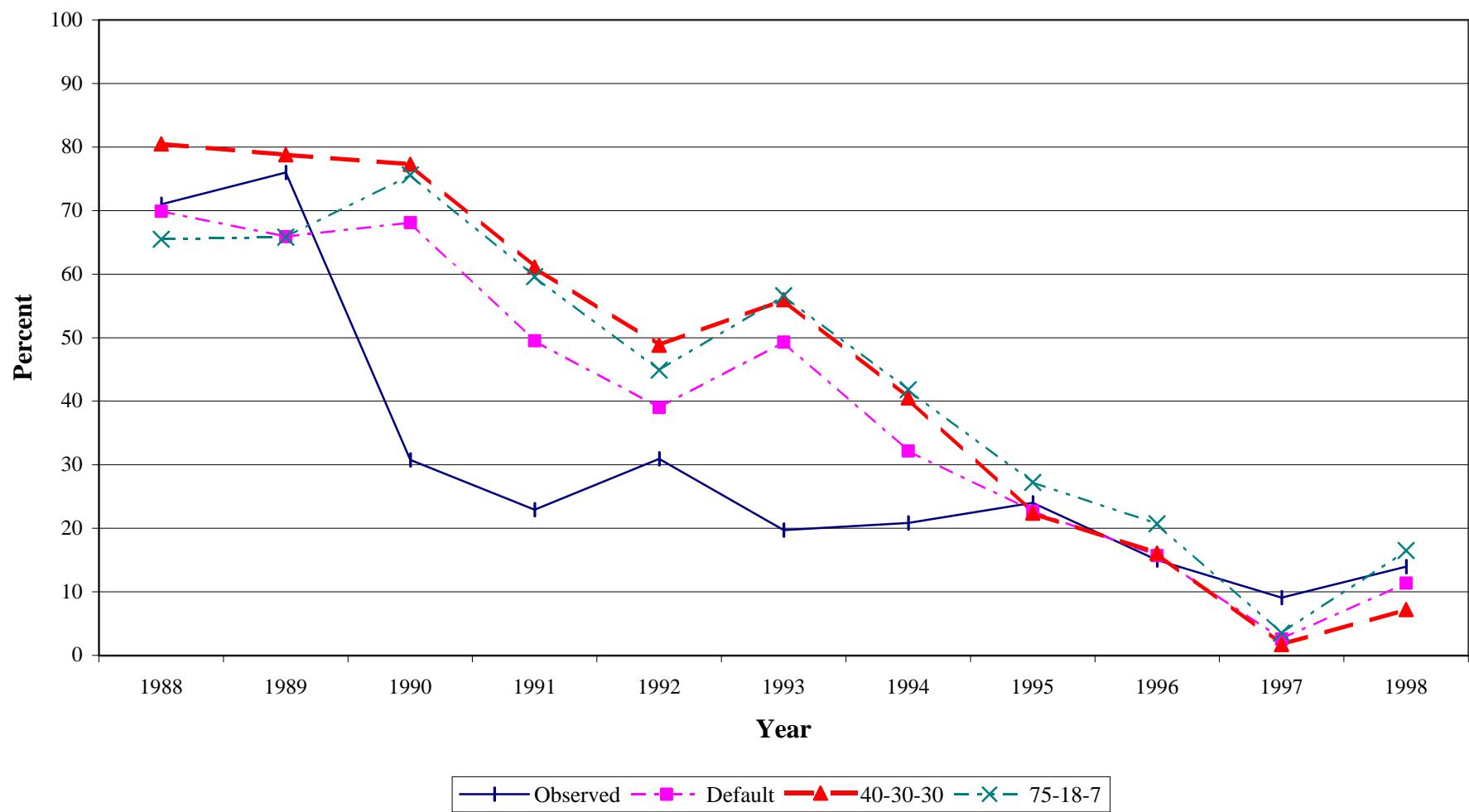


Figure Q4-14c
**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
 Exceeding 10 µg/dl Default Parameters - Three Dust : Soil Partition Scenarios**
Site Wide 1988-1998

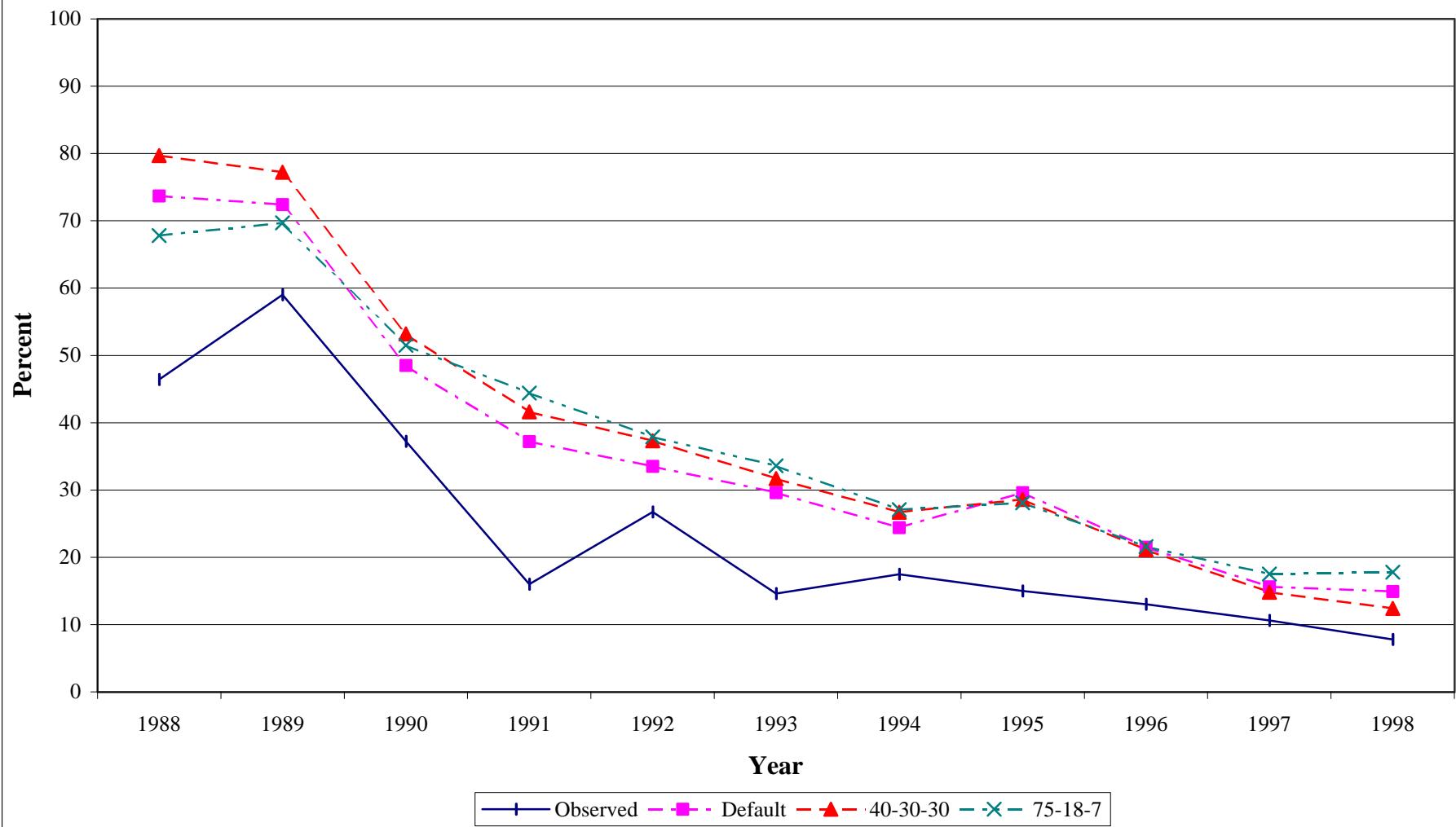


Table Q4.28 Predicted and Observed Lead Toxicity
Percent of 0-84 Month Old Children With Blood Lead Greater Than 10 µg/dl
Default Parameters - Three Dust:Soil Partition Scenarios

Year	Observed and Predicted Lead Toxicity			
	Observed	Default	40-30-30	75-18-7
	Kellogg			
1988	41	80	86	76
1989	54 (52) ¹	79	82	76
1990	41 (40)	58	66	60
1991	20	44	49	53
1992	32	39	44	44
1993	17 (18)	30	34	36
1994	20	28	31	31
1995	17	38	38	36
1996	17	26	27	26
1997	14 (15)	19	19	23
1998	9 (10)	18	15	22
Smelterville				
1988	71 (72)	70	81	66
1989	76 (78)	66	79	66
1990	31	68	77	76
1991	23	50	61	60
1992	31	39	49	45
1993	20	49	56	57
1994	21	32	41	42
1995	24 (28)	23	22	27
1996	15 (12)	16	16	21
1997	9	3	2	4
1998	14	11	7	17
Site Wide				
1988	46	74	80	68
1989	59 (56)	72	77	70
1990	37	49	53	52
1991	16 (15)	37	42	44
1992	27	34	37	38
1993	15	30	32	34
1994	17	24	27	27
1995	15	30	29	28
1996	13 (12)	22	21	22
1997	11	16	15	18
1998	8	15	12	18

Notes:

1 - Values in parentheses indicate total population values, and the full number of observations were not included in the model runs due to missing environmental media concentrations.

Figure Q4-15a
Predicted and Observed Blood Lead in 0-84 Month Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Kellogg 1988-1998

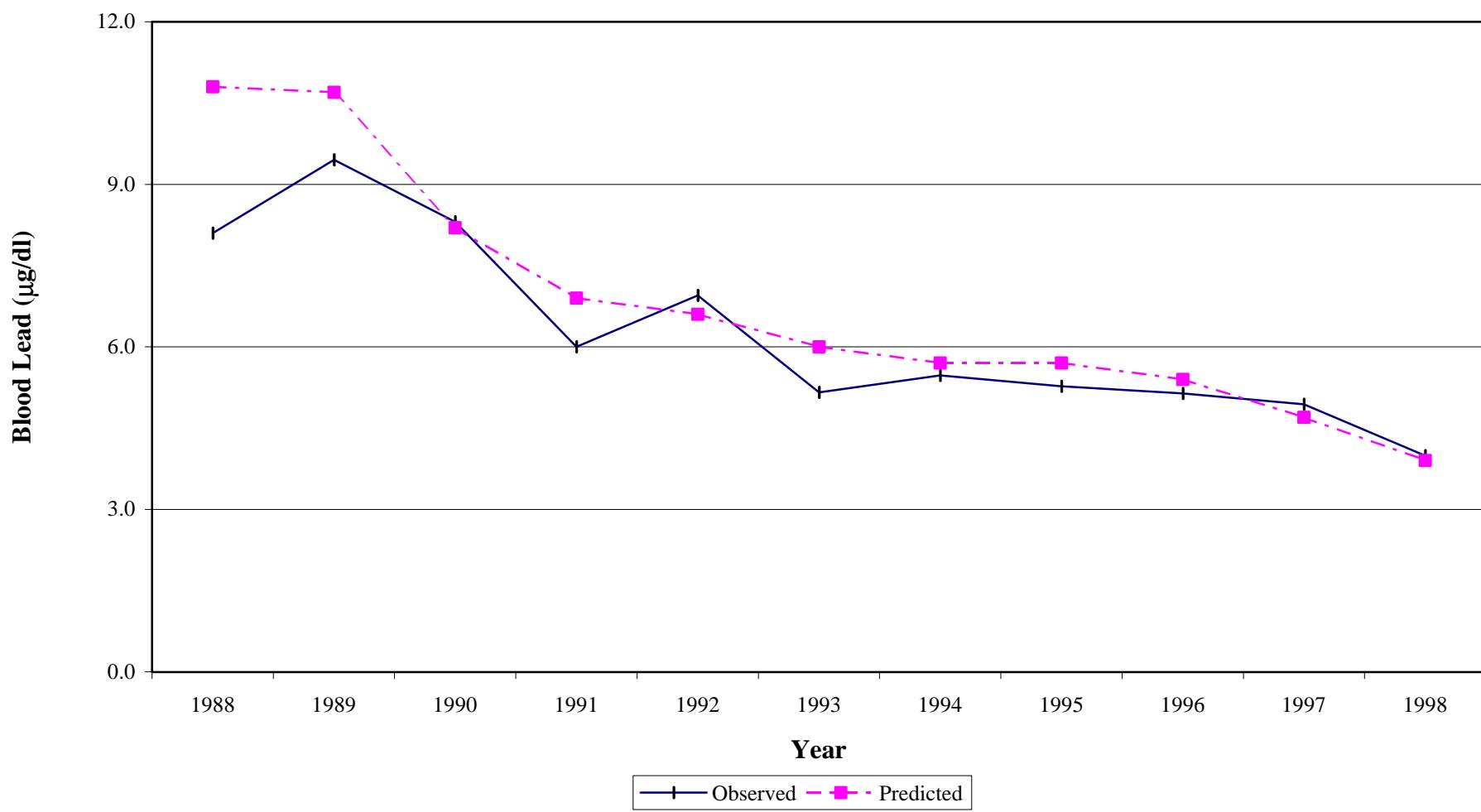


Figure Q4-15b
Predicted and Observed Blood Lead in 0-84 Month Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Smelterville 1988-1998



Figure Q4-15c
Predicted and Observed Blood Lead in 0-84 Month Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Site Wide 1988-1998



Figure Q4-15d
Predicted and Observed Blood Lead in Two Year Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Kellogg 1988-1998

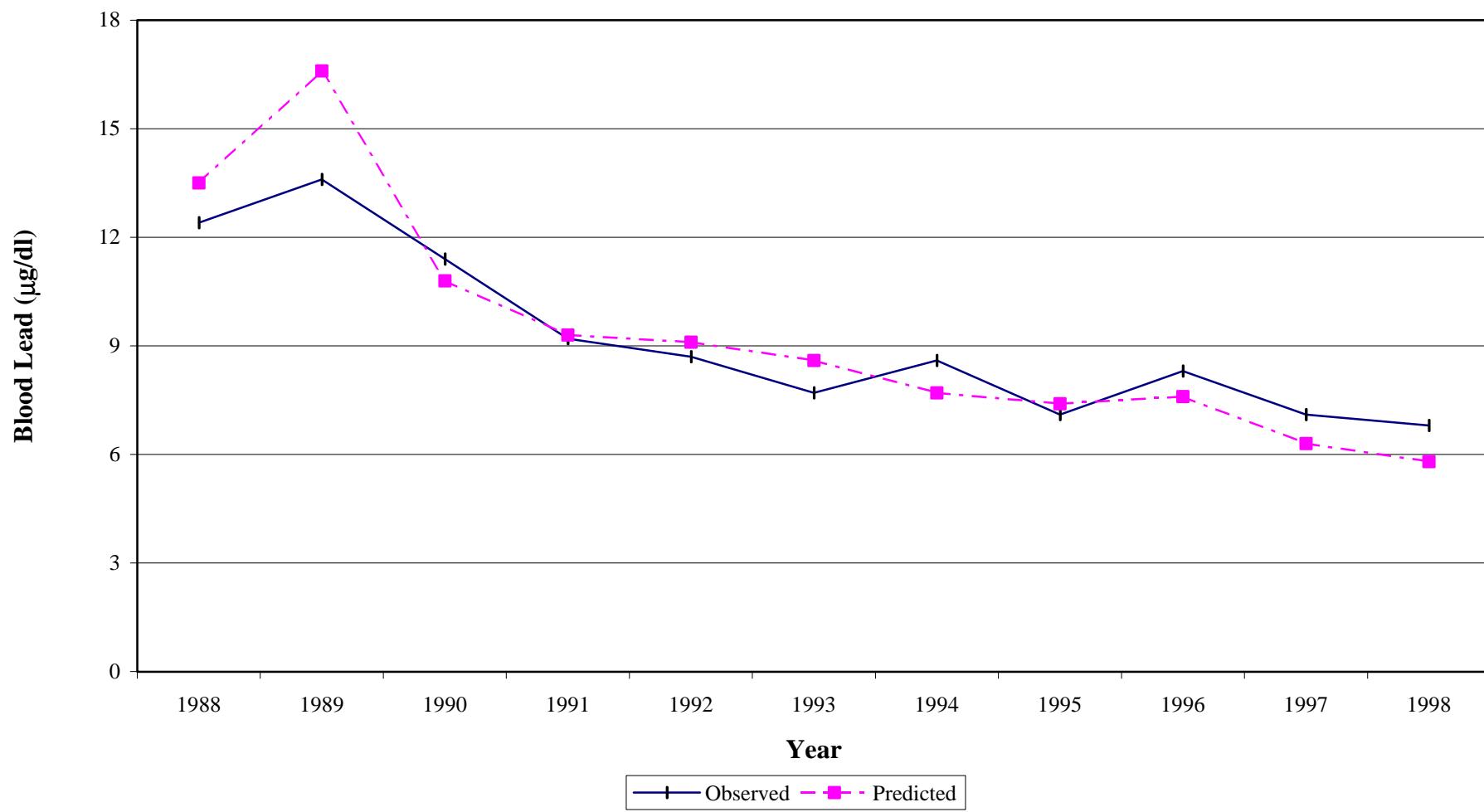


Figure Q4-15e
Predicted and Observed Blood Lead in Two Year Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Smelterville 1988-1998

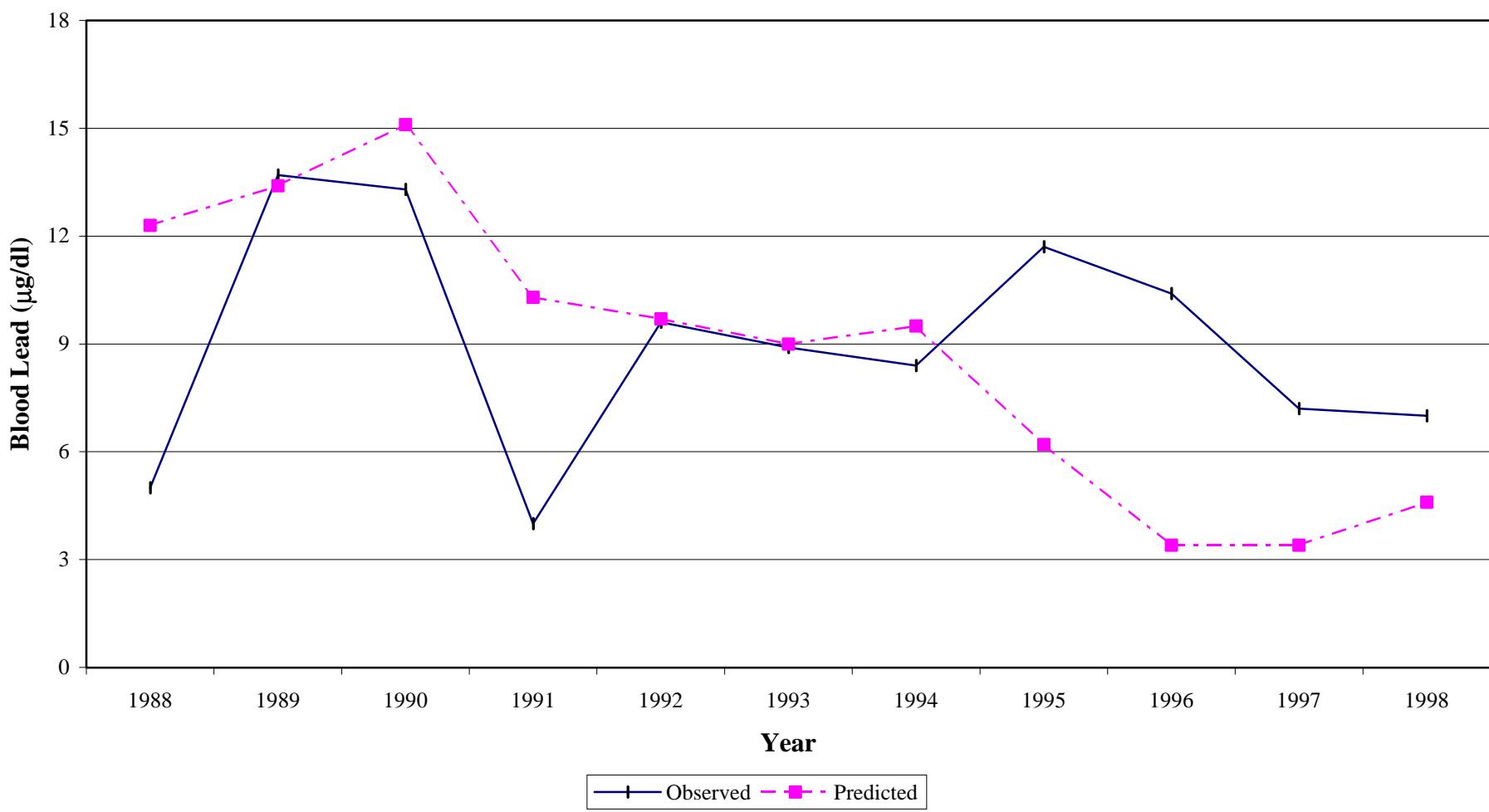


Figure Q4-15f
Predicted and Observed Blood Lead in Two Year Old Children
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Site Wide 1988-1998



Figure Q4-16a
Predicted and Observed Geometric Standard Deviation
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Kellogg 1988-1998

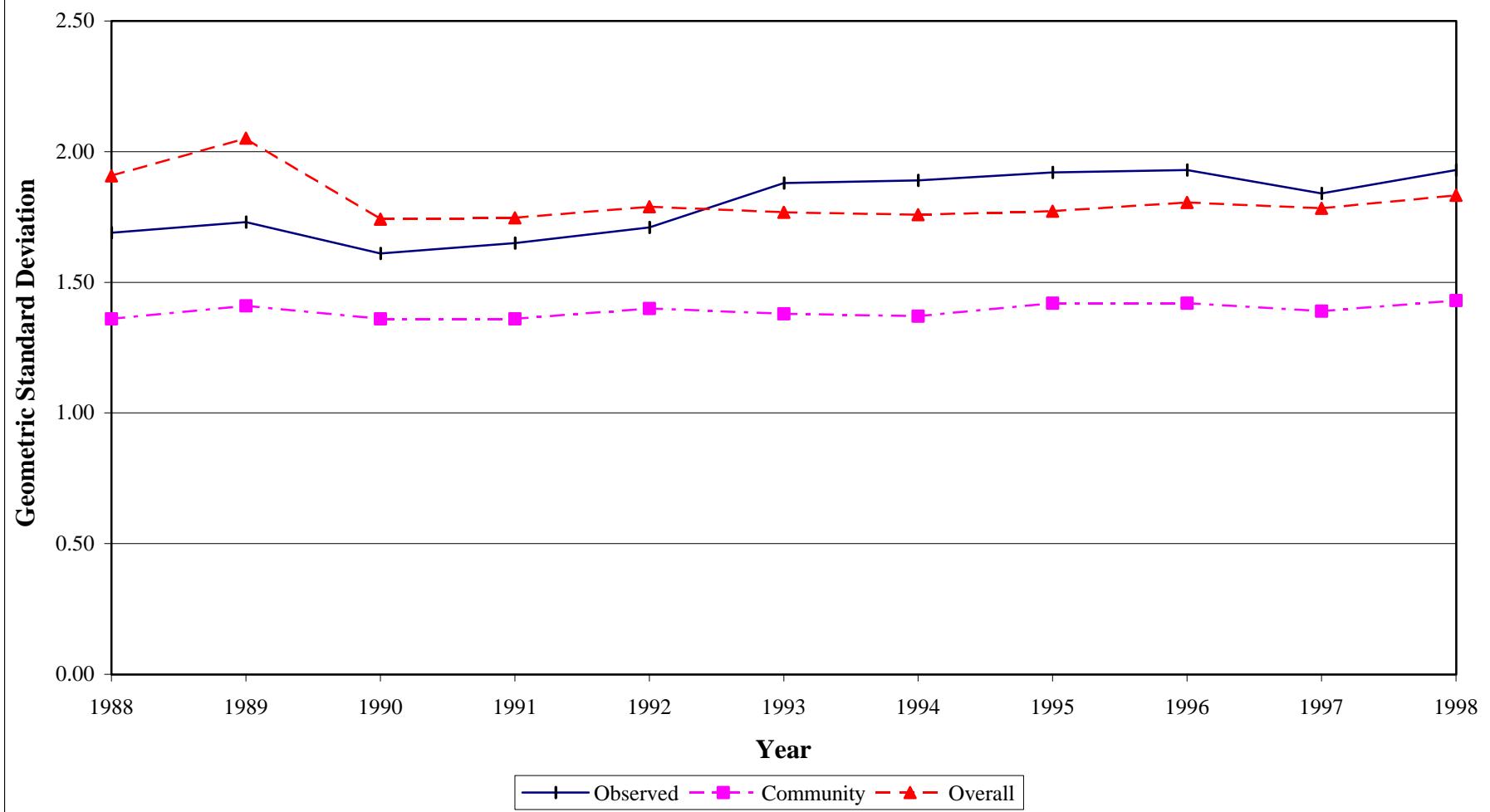


Figure Q4-16b
Predicted and Observed Geometric Standard Deviation
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Smelterville 1988-1998

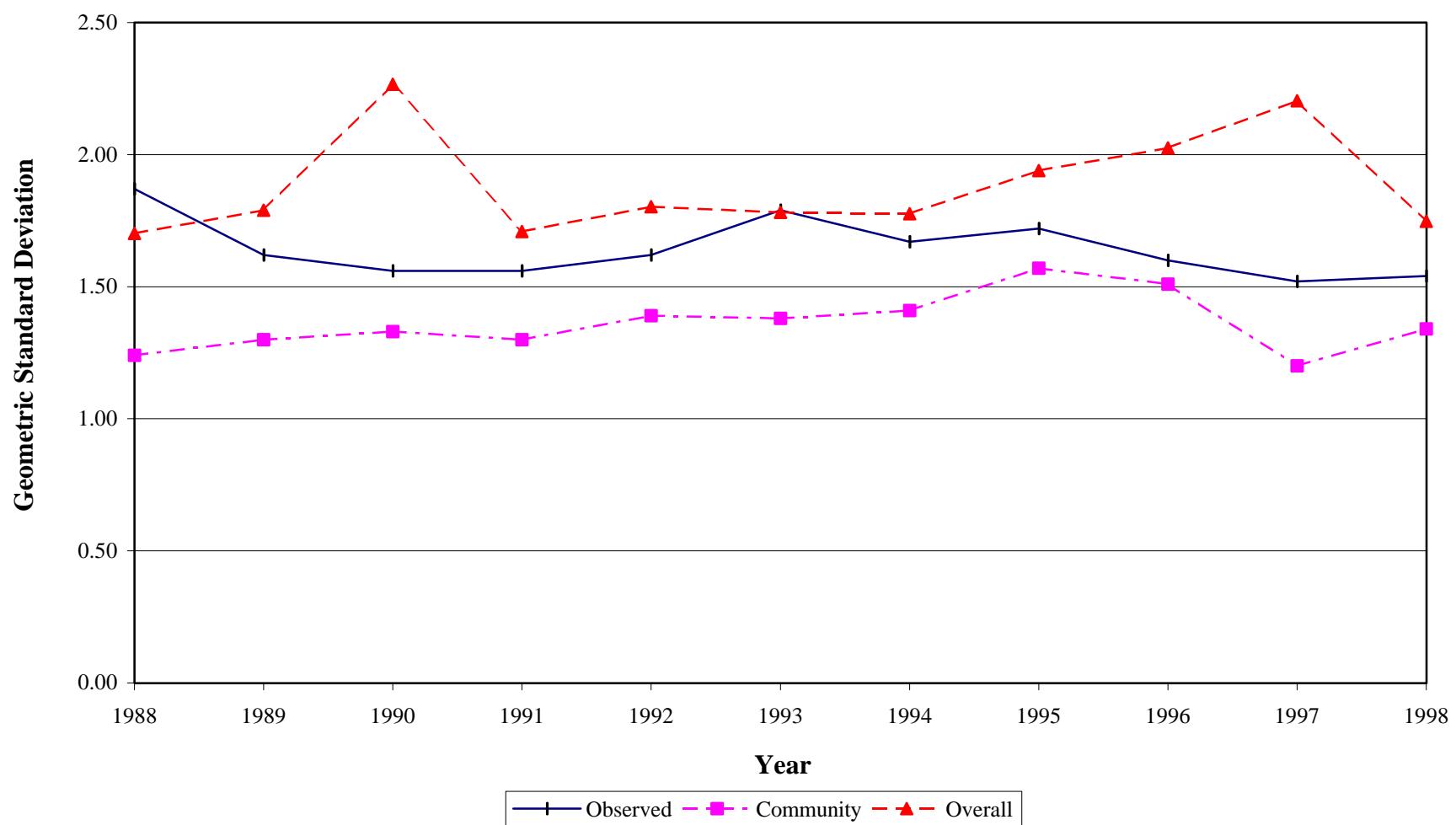


Figure Q4-16c
Predicted and Observed Geometric Standard Deviation
42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Site Wide 1988-1998

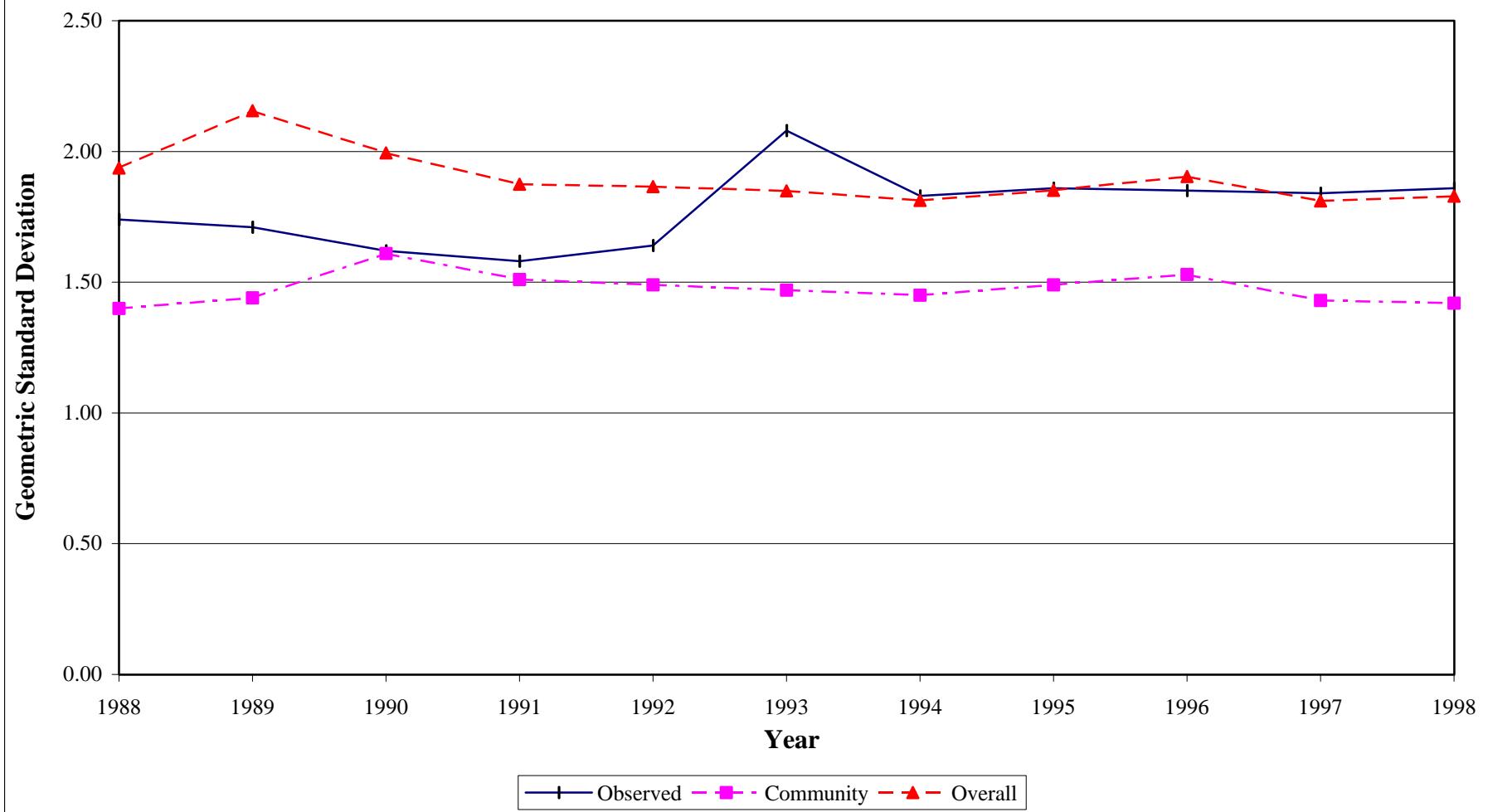


Figure Q4-17a

**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
Exceeding 10 µg/dl 42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Kellogg 1988-1998**

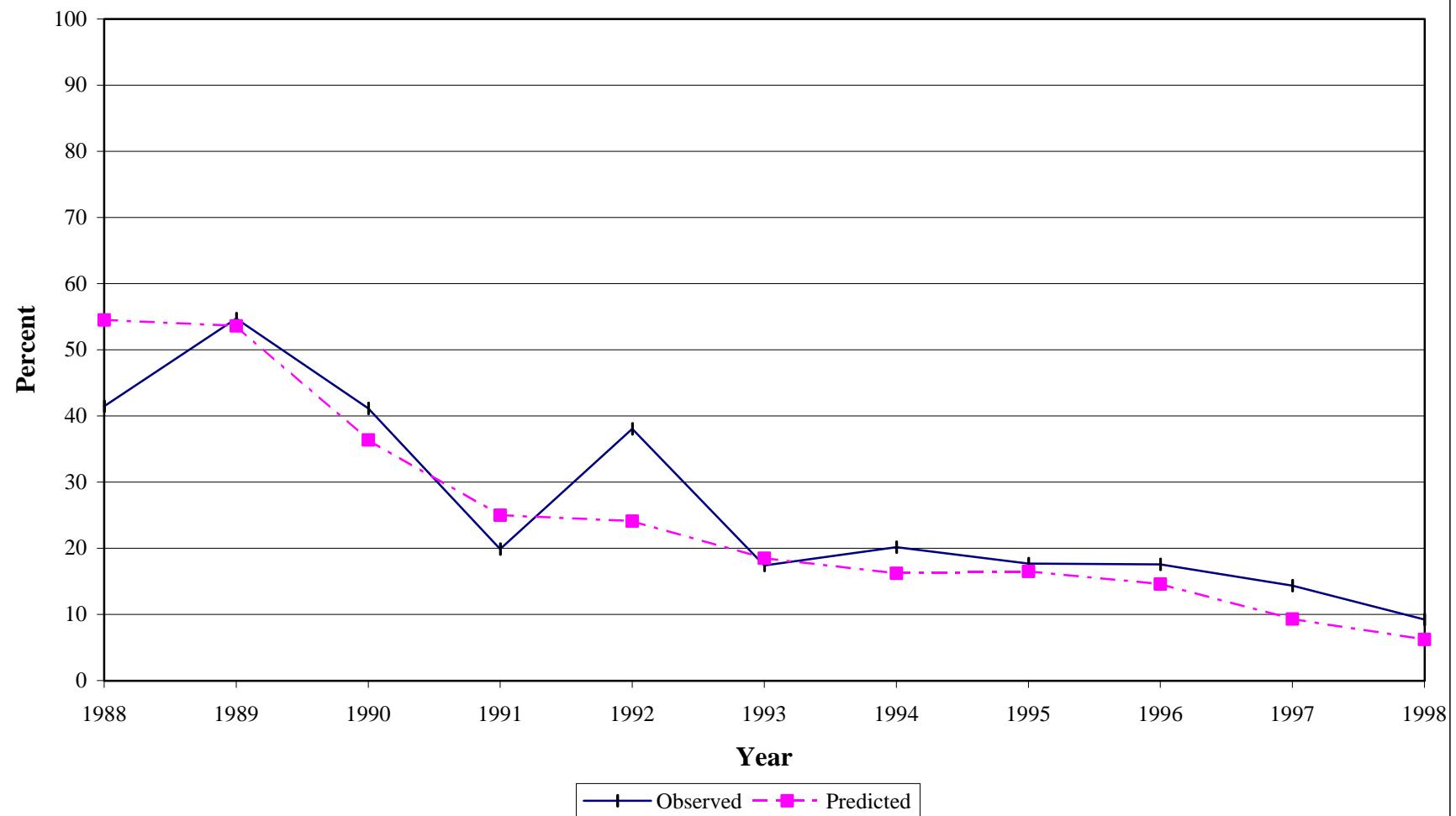


Figure Q4-17b
**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
Exceeding 10 µg/dl, 42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability**
Smelterville 1988-1998

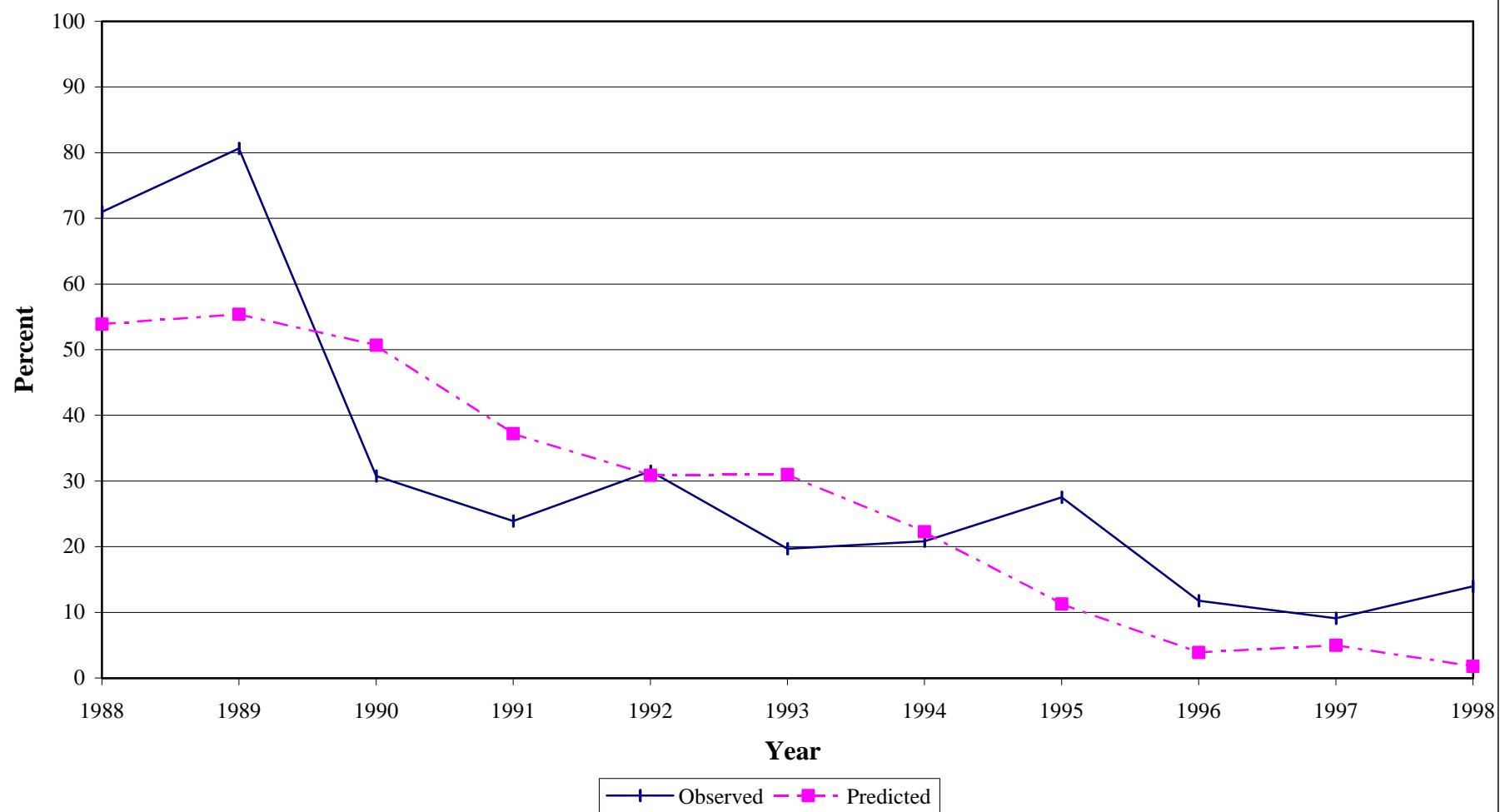


Figure Q4-17c

**Predicted and Observed Percent of 0-84 Month Old Children with Blood Lead Level
Exceeding 10 µg/dl, 42:27:19:12 Dust:Soil Partition Scenarios at 18% Bioavailability
Site Wide 1988-1998**

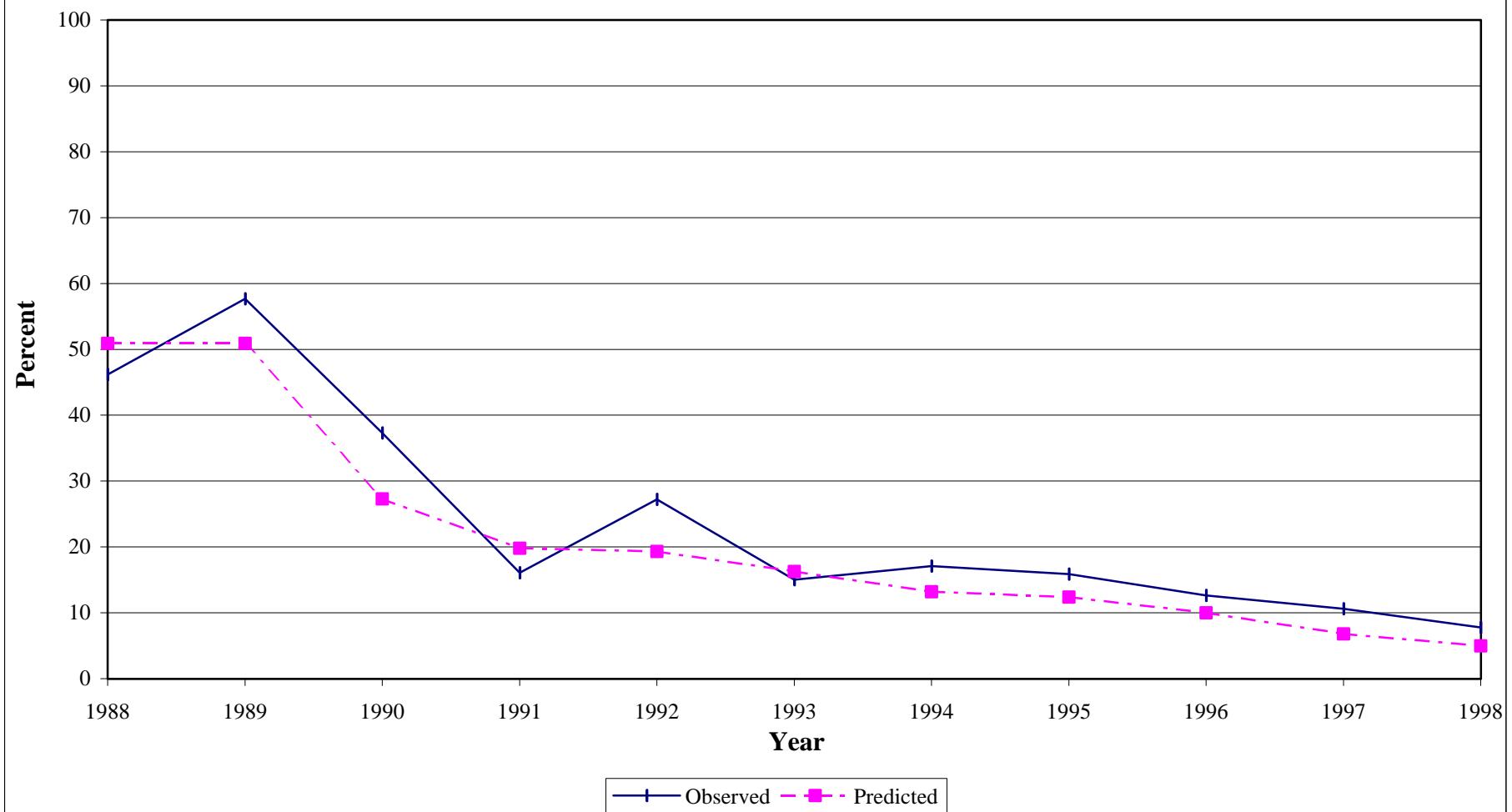


Figure Q4-18a
Observed vs. Predicted Arithmetic Mean Blood Lead Levels
Default Scenario at 30% Bioavailability
Site Wide 1988-1998

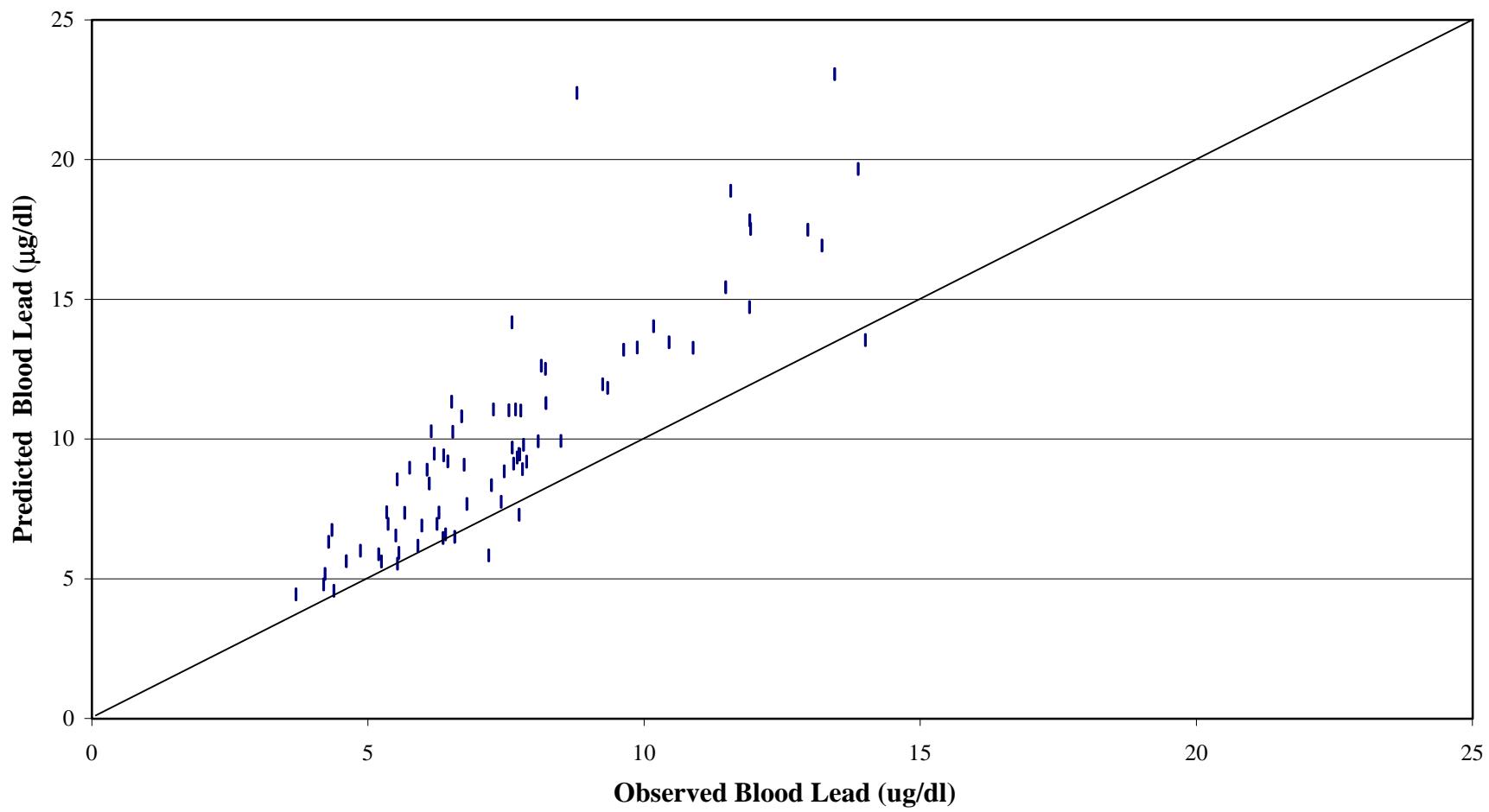


Figure Q4-19a
Observed vs. Predicted Geometric Mean Blood Lead Levels
Default Scenario at 30% Bioavailability
Site Wide 1988-1998

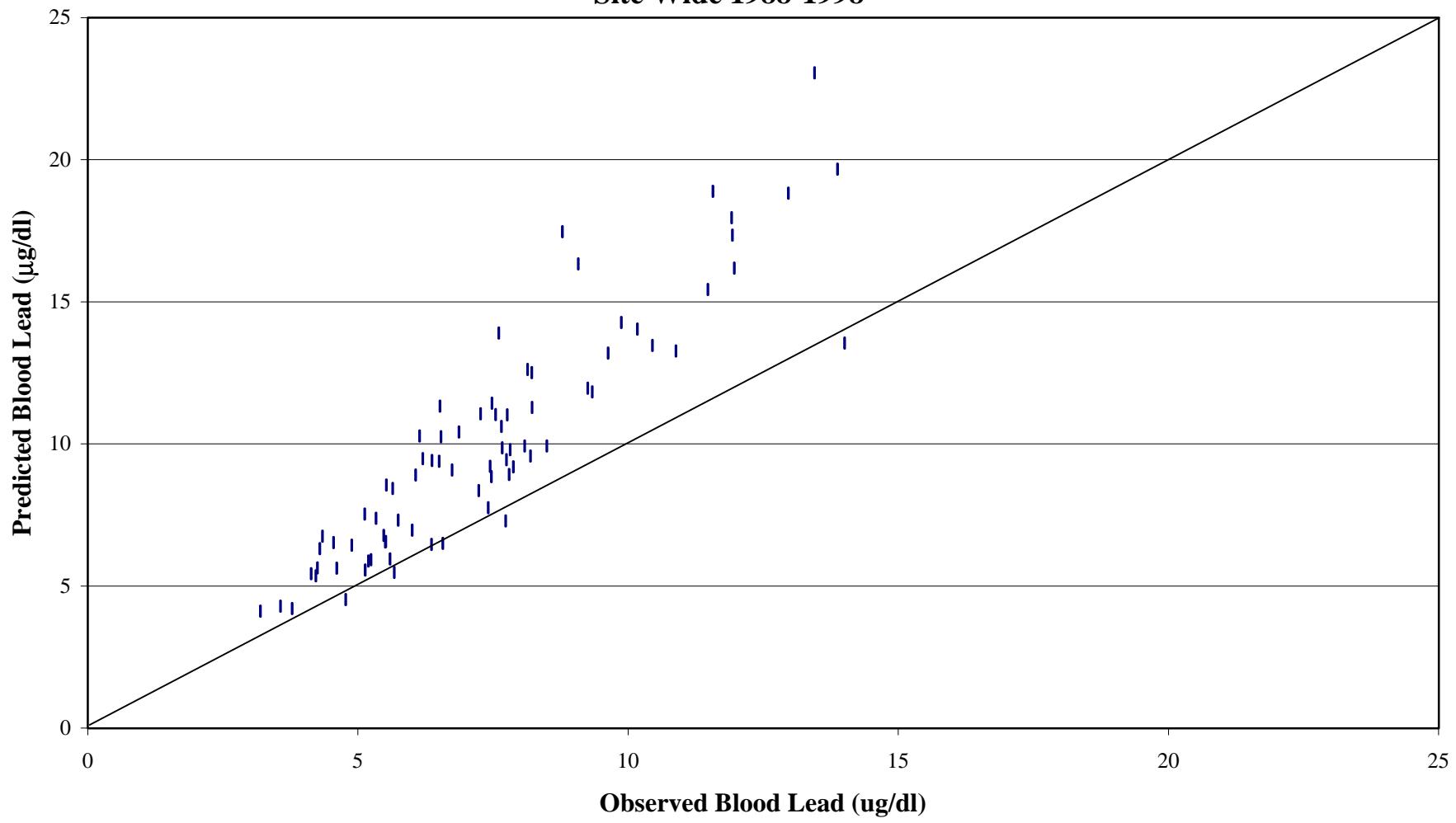


Figure Q4-18b
Observed vs Predicted Arithmetic Mean Blood Lead Levels
42:27:19:12 Dust:Soil Partition Scenario at 18% Bioavailability
Site Wide 1988-1998

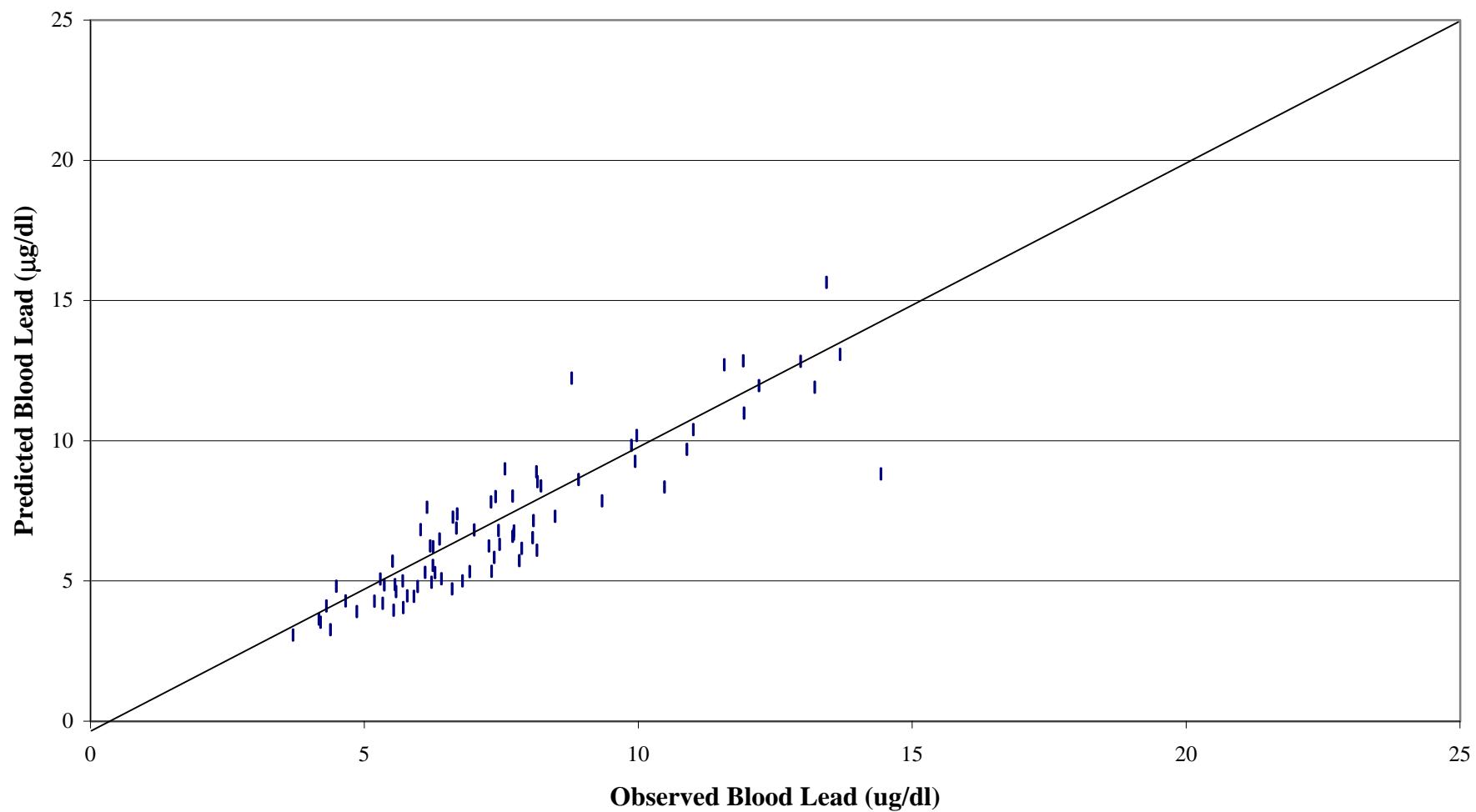


Figure Q4-19b
Observed vs. Predicted Geometric Mean Blood Lead Levels
42:27:19:12 Dust:Soil Partition Scenario at 18% Bioavailability
Site Wide 1988-1998

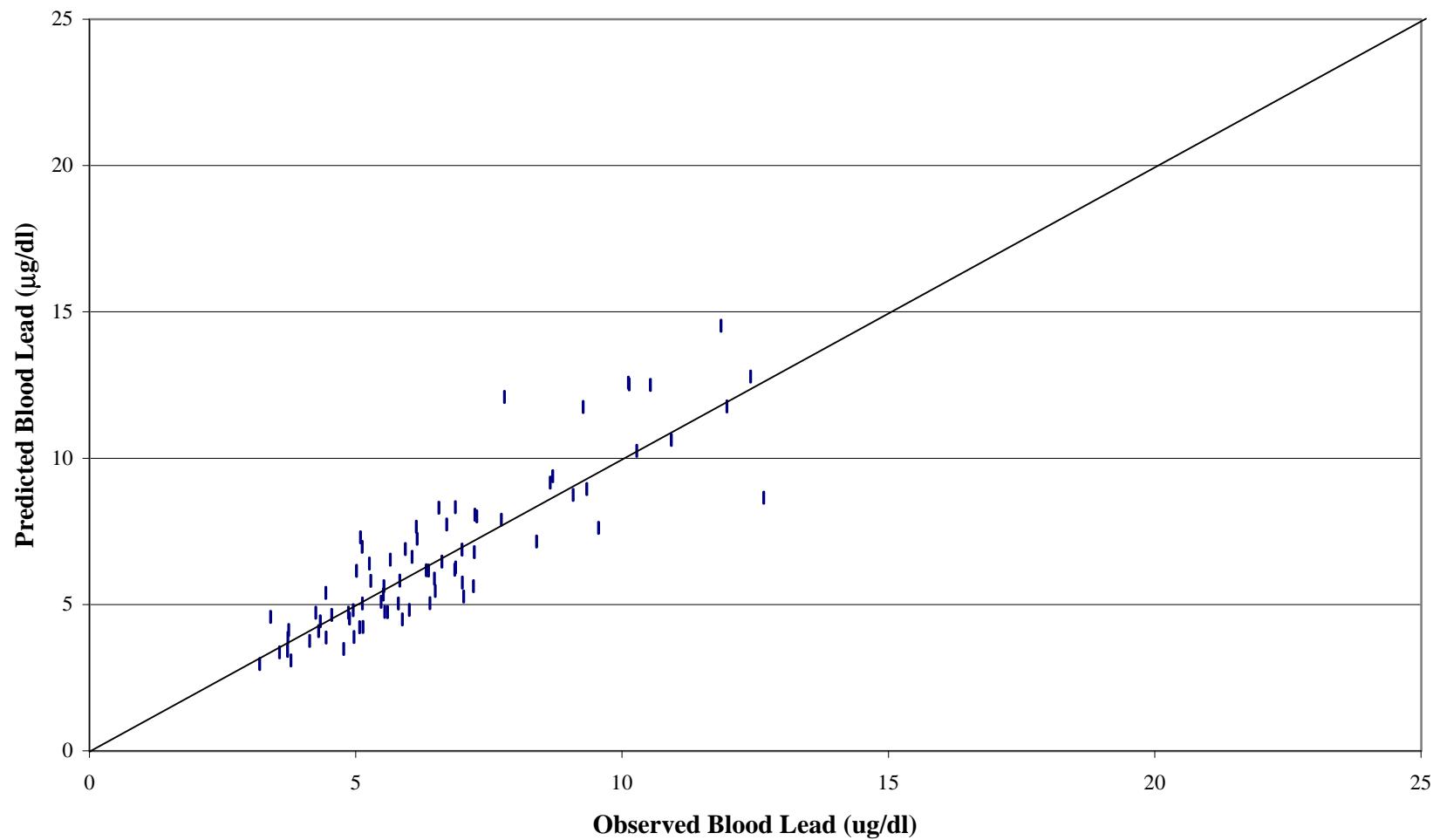


Figure Q4-20
Estimated Bioavailability Trends, 1988-1998



Table Q4.29
Estimated Aggregate Soil and Dust Effective Bioavailability 1988-1998

Year	Bioavailability	
	Arithmetic Mean	Geometric Mean
1988	17	14
1989	23	17
1990	23	18
1991	22	17
1992	26	21
1993	21	14
1994	24	18
1995	23	17
1996	30	21
1997	32	22
1998	30	21

**Table Q4.30 Predicted and Observed Geometric Mean Blood Lead Levels,
Geometric Standard Deviations, and Toxicity for 0-84 Month Old Children
42:27:19:12 Dust:Soil Partition at 18% Bioavailability**

	Mean Blood Lead Levels for Two Year Old Children ($\mu\text{g}/\text{dl}$)		Mean Blood Lead Levels 0-9 Year Old Children ($\mu\text{g}/\text{dl}$)		Geometric Standard Deviations			Percent of Children with Blood Lead $\geq 10 \mu\text{g}/\text{dl}$	
	Year	Observed	Predicted	Observed	Predicted	Observed	Community	Overall	Observed
Kellogg									
1988	12.4	13.5	8.1	10.8	1.69	1.36	1.91	41.4	54.5
1989	13.6	16.6	9.5	10.7	1.73	1.41	2.05	54.7	53.6
1990	11.4	10.8	8.3	8.2	1.61	1.36	1.74	41.1	36.4
1991	9.2	9.3	6.0	6.9	1.65	1.36	1.75	19.9	25.0
1992	8.7	9.1	7.0	6.6	1.71	1.40	1.79	38.1	24.1
1993	7.7	8.6	5.2	6.0	1.88	1.38	1.77	17.4	18.5
1994	8.6	7.7	5.5	5.7	1.89	1.37	1.76	20.2	16.2
1995	7.1	7.4	5.3	5.7	1.92	1.42	1.77	17.7	16.5
1996	8.3	7.6	5.1	5.4	1.93	1.42	1.81	17.6	14.6
1997	7.1	6.3	4.9	4.7	1.84	1.39	1.78	14.4	9.3
1998	6.8	5.8	4.0	3.9	1.93	1.43	1.83	9.2	6.2
Smelterville									
1988	5	12.3	11.5	10.5	1.87	1.24	1.70	71.0	53.9
1989	13.7	13.4	13.0	10.8	1.62	1.30	1.79	80.6	55.4
1990	13.3	15.1	9.0	10.2	1.56	1.33	2.27	30.8	50.7
1991	4	10.3	6.0	8.4	1.56	1.30	1.71	23.9	37.2
1992	9.6	9.7	7.4	7.5	1.62	1.39	1.80	31.5	30.9
1993	8.9	9	5.8	7.5	1.79	1.38	1.78	19.7	31.0
1994	8.4	9.5	5.3	6.5	1.67	1.41	1.78	20.8	22.3
1995	11.7	6.2	6.2	4.5	1.72	1.57	1.94	27.5	11.3
1996	10.4	3.4	5.8	2.9	1.60	1.51	2.03	11.8	3.9
1997	7.2	3.4	5.2	2.7	1.52	1.20	2.20	9.1	5.0
1998	7	4.6	5.8	3.1	1.54	1.34	1.75	14.0	1.8
Site Wide									
1988	11.9	12.9	8.5	10.2	1.74	1.40	1.94	46.2	50.9
1989	13.4	15.6	10.1	10.2	1.71	1.44	2.16	57.7	50.9
1990	10.9	9.7	7.9	6.6	1.62	1.61	1.99	37.3	27.3
1991	7.4	8	5.6	5.9	1.58	1.51	1.87	16.1	19.8
1992	8.2	8.4	6.6	5.8	1.64	1.49	1.87	27.2	19.3
1993	7.7	8	4.5	5.5	2.08	1.47	1.85	15.0	16.3
1994	7.7	6.8	5.2	5.1	1.83	1.45	1.81	17.1	13.2
1995	7	6.8	5.1	4.9	1.86	1.49	1.85	15.9	12.4
1996	8.1	6.5	4.8	4.4	1.85	1.53	1.90	12.6	10.0
1997	6.3	5.3	4.5	4.1	1.84	1.43	1.81	10.6	6.8
1998	6.1	5.3	4.1	3.7	1.86	1.42	1.83	7.8	5.0